L26 ANSWER 1 OF 2 USPATFULL on STN
AN 2003:40375 USPATFULL
TI Exhaust gas purifying apparatus for an internal combustion engine
IN Iizuka, Hidehiro, Tsuchiura, JAPAN
Kuroda, Osamu, Hitachi, JAPAN
Ogawa, Toshio, Takahagi, JAPAN
Kato, Akira, Mito, JAPAN
Miyadera, Hiroshi, Hitachi, JAPAN
Kitahara, Yuichi, Hitachinaka, JAPAN
Tokuda, Hiroatsu, Hitachinaka, JAPAN
PA Hitachi, Ltd., Tokyo, JAPAN (non-U.S. corporation)
PI US 6517784 B1 20030211
AI US 2000-588711 20000607 (9)
RLI Division of Ser. No. US 1996-585055, filed on 11 Jan 1996, now patented, Pat. No. US 6093377, issued on 25 Jul 2000
PRAI JP 1995-1704 19950110
DT Utility
FS GRANTED
EXNAM Primary Examiner: Tran, Hien
LREP Kenyon & Kenyon
CLMN Number of Claims: 6
ECL Exemplary Claim: 1
DRWN 8 Drawing Figure(s); 4 Drawing Page(s)
LN.CNT 689
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Exhaust gas from internal combustion engines is treated with catalyst comprising an inorganic oxide supporter which supports at least one of noble metals selected from Rh, Pt, and Pd, alkali rare earth metals, rare earth metals, and magnesium in order to remove NOx effectively with superior durability of the catalyst notwithstanding the internal combustion engine is under a stoichiometric operation condition or a lean burning operation condition.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L26 ANSWER 2 OF 2 USPATFULL on STN
AN 2000:94676 USPATFULL
TI Removal of nitrogen oxides from exhaust gas using catalyst
IN Iizuka, Hidehiro, Tsuchiura, Japan
Kuroda, Osamu, Hitachi, Japan
Ogawa, Toshio, Takahagi, Japan
Kato, Akira, Mito, Japan
Miyadera, Hiroshi, Hitachi, Japan
Kitahara, Yuichi, Hitachinaka, Japan
Tokuda, Hiroatsu, Hitachinaka, Japan
PA Hitachi, Ltd., Tokyo, Japan (non-U.S. corporation)
PI US 6093377 20000725
AI US 1996-585055 19960111 (8)
PRAI JP 1995-1704 19950110
DT Utility
FS Granted
EXNAM Primary Examiner: Dunn, Tom; Assistant Examiner: DiMauro, Peter
LREP Kenyon & Kenyon
CLMN Number of Claims: 8
ECL Exemplary Claim: 1
DRWN 9 Drawing Figure(s); 4 Drawing Page(s)
LN.CNT 750
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Exhaust gas from internal combustion engines is treated with catalyst comprising an inorganic oxide supporter which supports at least one of noble metals selected from Rh, Pt, and Pd, alkali rare earth metals, rare earth metals, and magnesium in order to remove NOx effectively with superior durability of the catalyst notwithstanding the internal

combustion engine is under a stoichiometric operation condition or a lean burning operation condition.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

(FILE 'HOME' ENTERED AT 11:13:39 ON 10 JUN 2004)

FILE 'CAPLUS, USPATFULL, CA, CAOLD' ENTERED AT 11:14:17 ON 10 JUN 2004

L1	50	S LANTHANUM CHLORIDE (S) SUPPORT
L2	40	S L1 AND CATALYST
L3	27	S L2 AND RARE EARTH
L4	2	S L3 AND LANTHANUM OXYCHLORIDE
L5	25	S L3 NOT L4
L6	11	S L5 AND COPPER
L7	10	DUP REM L6 (1 DUPLICATE REMOVED)
L8	4	S LANTHANUM CHLORIDE SUPPORT
L9	3	DUP REM L8 (1 DUPLICATE REMOVED)
L10	1	S L9 NOT L4
L11	2	S LANTHANUM OXYCHLORIDE SUPPORT
L12	0	S L11 NOT L4
L13	4	S RARE EARTH HALIDE SUPPORT
L14	0	S L13 NOT L8
L15	0	S S LANTHANUM CHLORIDE (P) CATALYST SUPPORT
L16	12	S LANTHANUM CHLORIDE (P) CATALYST SUPPORT
L17	7	DUP REM L16 (5 DUPLICATES REMOVED)
L18	7	S L17 NOT L8
L19	7	S L18 NOT L4
L20	4	S RARE EARTH METAL SUPPORTS
L21	4	S L20 NOT L8
L22	4	S L21 NOT L4
L23	4	S L22 NOT L17
L24	3	DUP REM L23 (1 DUPLICATE REMOVED)
L25	0	S L24 AND LANTHANUM CHLORIDE
L26	2	S L24 AND LANTHANUM
L27	0	S L26 AND ?HALIDE
L28	0	S L26 AND HALOGEN
L29	0	S L26 AND ?BROMIDE

L32 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2001:396811 CAPLUS
DN 134:368589
TI Oxyhalogenation process using catalysts having porous rare earth halide support
IN Gulotty, Robert J., Jr.; Jones, Mark E.; Hickman, Daniel A.
PA The Dow Chemical Company, USA
SO PCT Int. Appl., 26 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 6

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001038271	A1	20010531	WO 2000-US31490	20001116
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	BR 2000015922	A	20020806	BR 2000-15922	20001116
	EP 1235769	A1	20020904	EP 2000-978721	20001116
	EP 1235769	B1	20040526		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
	JP 2003514879	T2	20030422	JP 2001-539828	20001116
	TW 524791	B	20030321	TW 2000-89124674	20001121
	US 6680415	B1	20040120	US 2002-130107	20020514
	BG 106724	A	20021229	BG 2002-106724	20020520
	NO 2002002398	A	20020716	NO 2002-2398	20020521
	US 2004097767	A1	20040520	US 2003-706545	20031112
PRAI	US 1999-166897P	P	19991122		
	WO 2000-US31490	W	20001116		
	US 2002-130107	A3	20020514		

RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT
IT 10099-58-8, Lanthanum chloride 13759-25-6, Lanthanum chloride oxide (**LaClO**)
RL: CAT (Catalyst use); USES (Uses)
(**support**; catalysts with copper in an oxyhalogenation process using catalysts having porous rare earth halide support)

L32 ANSWER 2 OF 2 CA COPYRIGHT 2004 ACS on STN
AN 134:368589 CA
TI Oxyhalogenation process using catalysts having porous rare earth halide support
IN Gulotty, Robert J., Jr.; Jones, Mark E.; Hickman, Daniel A.
PA The Dow Chemical Company, USA
SO PCT Int. Appl., 26 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 6

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001038271	A1	20010531	WO 2000-US31490	20001116
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV,				

MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE,
SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, YU, ZA, ZW,
AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,
DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF,
BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

BR	2000015922	A	20020806	BR 2000-15922	20001116
EP	1235769	A1	20020904	EP 2000-978721	20001116
EP	1235769	B1	20040526		

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
IE, SI, LT, LV, FI, RO, MK, CY, AL, TR

JP	2003514879	T2	20030422	JP 2001-539828	20001116
TW	524791	B	20030321	TW 2000-89124674	20001121
US	6680415	B1	20040120	US 2002-130107	20020514
BG	106724	A	20021229	BG 2002-106724	20020520
NO	2002002398	A	20020716	NO 2002-2398	20020521
US	2004097767	A1	20040520	US 2003-706545	20031112
PRAI US	1999-166897P	P	19991122		
WO	2000-US31490	W	20001116		
US	2002-130107	A3	20020514		

RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

IT 10099-58-8, Lanthanum chloride 13759-25-6, Lanthanum chloride oxide (**LaClO**)
RL: CAT (Catalyst use); USES (Uses)
(**support**; catalysts with copper in an oxyhalogenation process using catalysts having porous rare earth halide support)

L49 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1994:18071 CAPLUS
DN 120:18071
TI The vibronic spectroscopy of praseodymium(3+) in yttrium chloride oxide and lanthanum chloride oxide
AU de Mello Donega, C.; Lambaerts, H.; Meijerink, A.; Blasse, G.
CS Debye Inst., Univ. Utrecht, Utrecht, 3508 TA, Neth.
SO Journal of Physics and Chemistry of Solids (1993), 54(8), 873-81
CODEN: JPCSAW; ISSN: 0022-3697
DT Journal
LA English
AB Vibronic transitions in the emission and excitation spectra of Pr3+ in REOCl (RE = Y, La) are reported. The influence of the Pr3+ concentration on the vibronic spectra of Pr3+ is investigated for La1-xPrxOCl ($x \leq 0.1$). Concentration enhancement of the vibronic transitions is observed in the excitation spectra only. This phenomenon is ascribed to the superexchange interaction between Pr3+ ions over distances of about 8 Å. Evidence that the vibronic transition probability AVIB for the 3H4(1,2) ↔ 3P0 transition of Pr3+ in LaOCl is the same in emission and excitation is presented. The value of AVIB for this transition are larger in YOCl:Pr3+ than in LaOCl:Pr3+, and scale with the transition probabilities for the zero-phonon lines. This suggests that the Δ-process contribution to the vibronic coupling strength dominates. The observed vibronic spectra of Pr3+ in REOCl give increased **support** for this suggestion.

L49 ANSWER 2 OF 2 CA COPYRIGHT 2004 ACS on STN
AN 120:18071 CA
TI The vibronic spectroscopy of praseodymium(3+) in yttrium chloride oxide and lanthanum chloride oxide
AU de Mello Donega, C.; Lambaerts, H.; Meijerink, A.; Blasse, G.
CS Debye Inst., Univ. Utrecht, Utrecht, 3508 TA, Neth.
SO Journal of Physics and Chemistry of Solids (1993), 54(8), 873-81
CODEN: JPCSAW; ISSN: 0022-3697
DT Journal
LA English
AB Vibronic transitions in the emission and excitation spectra of Pr3+ in REOCl (RE = Y, La) are reported. The influence of the Pr3+ concentration on the vibronic spectra of Pr3+ is investigated for La1-xPrxOCl ($x \leq 0.1$). Concentration enhancement of the vibronic transitions is observed in the excitation spectra only. This phenomenon is ascribed to the superexchange interaction between Pr3+ ions over distances of about 8 Å. Evidence that the vibronic transition probability AVIB for the 3H4(1,2) ↔ 3P0 transition of Pr3+ in LaOCl is the same in emission and excitation is presented. The value of AVIB for this transition are larger in YOCl:Pr3+ than in LaOCl:Pr3+, and scale with the transition probabilities for the zero-phonon lines. This suggests that the Δ-process contribution to the vibronic coupling strength dominates. The observed vibronic spectra of Pr3+ in REOCl give increased **support** for this suggestion.

(FILE 'HOME' ENTERED AT 11:13:39 ON 10 JUN 2004)

FILE 'CAPLUS, USPATFULL, CA, CAOLD' ENTERED AT 11:14:17 ON 10 JUN 2004

L1	50	S	LANTHANUM CHLORIDE (S) SUPPORT
L2	40	S	L1 AND CATALYST
L3	27	S	L2 AND RARE EARTH
L4	2	S	L3 AND LANTHANUM OXYCHLORIDE
L5	25	S	L3 NOT L4
L6	11	S	L5 AND COPPER
L7	10	DUP REM	L6 (1 DUPLICATE REMOVED)
L8	4	S	LANTHANUM CHLORIDE SUPPORT
L9	3	DUP REM	L8 (1 DUPLICATE REMOVED)
L10	1	S	L9 NOT L4
L11	2	S	LANTHANUM OXYCHLORIDE SUPPORT
L12	0	S	L11 NOT L4
L13	4	S	RARE EARTH HALIDE SUPPORT
L14	0	S	L13 NOT L8
L15	0	S	S LANTHANUM CHLORIDE (P) CATALYST SUPPORT
L16	12	S	LANTHANUM CHLORIDE (P) CATALYST SUPPORT
L17	7	DUP REM	L16 (5 DUPLICATES REMOVED)
L18	7	S	L17 NOT L8
L19	7	S	L18 NOT L4
L20	4	S	RARE EARTH METAL SUPPORTS
L21	4	S	L20 NOT L8
L22	4	S	L21 NOT L4
L23	4	S	L22 NOT L17
L24	3	DUP REM	L23 (1 DUPLICATE REMOVED)
L25	0	S	L24 AND LANTHANUM CHLORIDE
L26	2	S	L24 AND LANTHANUM
L27	0	S	L26 AND ?HALIDE
L28	0	S	L26 AND HALOGEN
L29	0	S	L26 AND ?BROMIDE
L30	329	S	COPPER (P) LANTHANUM (P) SUPPORT
L31	168	S	L30 AND DEPOS?
L32	2	S	LACLO SUPPORT

FILE 'REGISTRY' ENTERED AT 11:56:17 ON 10 JUN 2004

L33	0	S	LACL/CF
L34	0	S	LACL/CN
L35	2	S	LANTHANUM CHLORIDE/CN
L36	0	S	LANTHANUM OXYCHLORIDE/CN
L37	1	S	LANTHANUM CHLORIDE OXIDE/CN

FILE 'CAPLUS, USPATFULL, CA, CAOLD' ENTERED AT 12:01:42 ON 10 JUN 2004

L38	6379	S	L35
L39	526	S	L38 AND COPPER
L40	34	S	L39 AND POROUS
L41	18	S	L40 AND SUPPORT
L42	15	DUP REM	L41 (3 DUPLICATES REMOVED)
L43	11	S	L42 NOT L7
L44	11	S	L43 NOT L8
L45	10	S	L43 NOT L17
L46	10	S	L45 NOT L32
L47	12	S	L37
L48	0	S	L47 AND COPPER
L49	2	S	L47 AND SUPPORT

FILE 'REGISTRY' ENTERED AT 12:14:16 ON 10 JUN 2004

L50	0	S	LAOCL/CF
L51	0	S	LAOCL/CN
L52	2	S	LAOCL

FILE 'CAPLUS, USPATFULL, CA, CAOLD' ENTERED AT 12:17:26 ON 10 JUN 2004

L53 10 S L47 NOT L49
L54 5 DUP REM L53 (5 DUPLICATES REMOVED)

L7 ANSWER 1 OF 10 USPATFULL on STN
AN 2003:253607 USPATFULL
TI On-line synthesis and regeneration of a **catalyst** used in autothermal oxidation
IN Bharadwaj, Sameer S., Midland, MI, United States
Maj, Joseph J., Midland, MI, United States
Siddall, Jonathan H., Midland, MI, United States
PA Dow Global Technologies Inc., Midland, MI, United States (U.S. corporation)
PI US 6624116 B1 20030923
AI US 2000-706464 20001103 (9)
RLI Division of Ser. No. US 1999-388220, filed on 1 Sep 1999, now patented, Pat. No. US 6166283
PRAI US 1999-136003P 19990526 (60)
US 1998-111861P 19981211 (60)
US 1998-99041P 19980903 (60)
DT Utility
FS GRANTED
EXNAM Primary Examiner: Yildirim, Bekir L.
LREP Pelton, James M.
CLMN Number of Claims: 26
ECL Exemplary Claim: 1
DRWN 0 Drawing Figure(s); 0 Drawing Page(s)
LN.CNT 1239
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB An on-line method of synthesizing or regenerating **catalysts** for autothermal oxidation processes, specifically, the oxidation of paraffinic hydrocarbons, for example, ethane, propane, and naphtha, to olefins, for example, ethylene and propylene. The **catalyst** comprises a Group 8B metal, for example, a platinum group metal and, optionally, a promoter, such as tin, antimony, or **copper**, on a support, preferably a monolith support. On-line synthesis or regeneration involves co-feeding a volatile Group 8B metal compound and/or a volatile promoter compound with the paraffinic hydrocarbon and oxygen into the oxidation reactor under ignition or autothermal conditions.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L7 ANSWER 2 OF 10 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 1
AN 2001:396811 CAPLUS
DN 134:368589
TI Oxyhalogenation process using **catalysts** having porous **rare earth** halide support
IN Gulotty, Robert J., Jr.; Jones, Mark E.; Hickman, Daniel A.
PA The Dow Chemical Company, USA
SO PCT Int. Appl., 26 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 6

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2001038271	A1	20010531	WO 2000-US31490	20001116

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

BR 2000015922 A 20020806 BR 2000-15922 20001116
EP 1235769 A1 20020904 EP 2000-978721 20001116
EP 1235769 B1 20040526
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR
JP 2003514879 T2 20030422 JP 2001-539828 20001116
TW 524791 B 20030321 TW 2000-89124674 20001121
US 6680415 B1 20040120 US 2002-130107 20020514
BG 106724 A 20021229 BG 2002-106724 20020520
NO 2002002398 A 20020716 NO 2002-2398 20020521
US 2004097767 A1 20040520 US 2003-706545 20031112
PRAI US 1999-166897P P 19991122
WO 2000-US31490 W 20001116
US 2002-130107 A3 20020514

AB An oxidative halogenation process involves contacting a hydrocarbon (e.g., ethylene) or a halogenated hydrocarbon with a source of halogen (e.g., hydrogen chloride) and a source of oxygen (e.g., air) in the presence of a **catalyst** (e.g., Cu on lanthanum chloride) so as to form a halocarbon, preferably a chlorocarbon, having a greater number of halogen substituents than the starting hydrocarbon or halogenated hydrocarbon (e.g., 1,2-dichloroethane). The **catalyst** is a novel composition comprising **copper** dispersed on a porous **rare earth** halide support, preferably, a porous **rare earth** chloride support. A **catalyst** precursor composition comprising **copper** dispersed on a porous **rare earth** oxyhalide support is disclosed. Use of the porous **rare earth** oxyhalide and oxyhalide as support materials for catalytic components is disclosed.

RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 3 OF 10 USPATFULL on STN
AN 2000:174909 USPATFULL
TI On-line synthesis and regenerating of a **catalyst** used in autothermal oxidation
IN Bharadwaj, Sameer S., Midland, MI, United States
Maj, Joseph J., Midland, MI, United States
Siddall, Jonathan H., Midland, MI, United States
PA The Dow Chemical Company, Midland, MI, United States (U.S. corporation)
PI US 6166283 20001226
AI US 1999-388220 19990901 (9)
RLI Continuation of Ser. No. US 1998-99041, filed on 3 Sep 1998 which is a continuation of Ser. No. US 1998-111861, filed on 11 Dec 1998 And a continuation of Ser. No. US 1999-136003, filed on 26 May 1999
PRAI US 1998-99041P 19980903 (60)
US 1998-111861P 19981211 (60)
US 1999-136003P 19990526 (60)
DT Utility
FS Granted
EXNAM Primary Examiner: Knode, Marian C.; Assistant Examiner: Dang, Thuan D.
CLMN Number of Claims: 22
ECL Exemplary Claim: 1
DRWN No Drawings
LN.CNT 1199
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB An on-line method of synthesizing or regenerating **catalysts** for autothermal oxidation processes, specifically, the oxidation of paraffinic hydrocarbons, for example, ethane, propane, and naphtha, to olefins, for example, ethylene and propylene. The **catalyst** comprises a Group 8B metal, for example, a platinum group metal and, optionally, a promoter, such as tin, antimony, or **copper**, on a support, preferably a monolith support. On-line synthesis or regeneration involves co-feeding a volatile Group 8B metal compound and/or a volatile promoter compound with the paraffinic hydrocarbon and

oxygen into the oxidation reactor under ignition or autothermal conditions.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L7 ANSWER 4 OF 10 USPATFULL on STN
AN 92:68222 USPATFULL
TI Oxyhydrochlorination **catalyst**
IN Taylor, Charles E., Pittsburgh, PA, United States
Noceti, Richard P., Pittsburgh, PA, United States
PA The United States of American as represented by the United States Department of Energy, Washington, DC, United States (U.S. government)
PI US 5139991 19920818
AI US 1991-666972 19910311 (7)
RLI Division of Ser. No. US 1990-516611, filed on 30 Apr 1990, now patented, Pat. No. US 5019652
DT Utility
FS Granted
EXNAM Primary Examiner: Shine, W. J.
LREP Glenn, Hugh W., Fisher, Robert J., Moser, William R.
CLMN Number of Claims: 11
ECL Exemplary Claim: 1
DRWN 8 Drawing Figure(s); 8 Drawing Page(s)
LN.CNT 452
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB An improved **catalyst** and method for the oxyhydrochlorination of methane is disclosed. The **catalyst** includes a pyrogenic porous support on which is layered as active material, cobalt chloride in major proportion, and minor proportions of an alkali metal chloride and of a **rare earth** chloride. On contact of the **catalyst** with a gas flow of methane, HCl and oxygen, more than 60% of the methane is converted and of that converted more than 40% occurs as monochloromethane. Advantageously, the monochloromethane can be used to produce gasoline boiling range hydrocarbons with the recycle of HCl for further reaction. This **catalyst** is also of value for the production of formic acid as are analogous **catalysts** with lead, silver or nickel chlorides substituted for the cobalt chloride.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L7 ANSWER 5 OF 10 USPATFULL on STN
AN 91:42792 USPATFULL
TI **Catalysts** and method
IN Taylor, Charles E., Pittsburgh, PA, United States
Noceti, Richard P., Pittsburgh, PA, United States
PA The United States as represented by the United States Department of Energy, Washington, DC, United States (U.S. government)
PI US 5019652 19910528
AI US 1990-516611 19900430 (7)
DT Utility
FS Granted
EXNAM Primary Examiner: Garvin, Patrick P.; Assistant Examiner: Peebles, Brent M.
LREP Glenn, Hugh W., Fisher, Robert J., Moser, William R.
CLMN Number of Claims: 10
ECL Exemplary Claim: 1
DRWN 8 Drawing Figure(s); 8 Drawing Page(s)
LN.CNT 446
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB An improved catlayst and method for the oxyhydrochlorination of methane is disclosed. The **catalyst** includes a pyrogenic porous support on which is layered as active material, cobalt chloride in major proportion, and minor proportions of an alkali metal chloride and of a

rare earth chloride. On contact of the **catalyst** with a gas flow of methane, HCl and oxygen, more than 60% of the methane is converted and of that converted more than 40% occurs as monochloromethane. Advantageously, the monochloromethane can be used to produce gasoline boiling range hydrocarbons with the recycle of HCl for further reaction. This **catalyst** is also of value for the production of formic acid as are analogous **catalysts** with lead, silver or nickel chlorides substituted for the cobalt chloride.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L7 ANSWER 6 OF 10 USPATFULL on STN
AN 89:58703 USPATFULL
TI **Catalyst** and process for the fluid-bed oxychlorination of ethylene to EDC
IN Eden, Jamal S., Akron, OH, United States
Cowfer, Joseph A., Medina, OH, United States
PA The B.F. Goodrich Company, Akron, OH, United States (U.S. corporation)
PI US 4849393 19890718
AI US 1987-140272 19871231 (7)
RLI Division of Ser. No. US 1986-898566, filed on 21 Aug 1986, now patented, Pat. No. US 4740642
DT Utility
FS Granted
EXNAM Primary Examiner: Garvin, Patrick P.; Assistant Examiner: Fourson, George R.
LREP Csontos, Alan A., Dunlap, Thoburn T.
CLMN Number of Claims: 10
ECL Exemplary Claim: 1
DRWN 1 Drawing Figure(s); 1 Drawing Page(s)
LN.CNT 861
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB A fluidizable **catalyst** composition is provided containing about 2% to about 8% by weight of **copper** (about 4% to about 17% by weight of **copper** salt), from about 1.0% to about 10% by weight of a **rare earth** metal salt(s), preferably the chloride salt(s), and from about 0.25% to about 2.3% by weight of an alkali metal salt(s), preferably the chloride salt(s), all weight percents based upon the total weight of the **catalyst** composition. The metals are codeposited on a fluidizable, high surface area alumina support. The weight of the alkali metal employed is not over 2.5% by weight (as the chloride) and the weight ratio of the **rare earth** metal salt(s) to the alkali metal salt(s) must be at least 1:1. Such **catalyst** compositions are extremely useful as fluid bed **catalysts** in the vapor phase oxychlorination reaction of ethylene, oxygen and hydrogen chloride to produce 1,2-dichloroethane (EDC). The use of the **catalysts** results in improved, high percent ethylene efficiencies and high percent HCl conversions, and avoids operating problems caused by stickiness of the **catalyst** in the fluid bed. A combination of **copper** chloride, potassium chloride and one or more of the **rare earth** chlorides on a fluidizable gamma alumina support, produces an excellent **catalyst** for a fluid bed ethylene oxychlorination process.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L7 ANSWER 7 OF 10 USPATFULL on STN
AN 88:26213 USPATFULL
TI **Catalyst** and process for the fluid-bed oxychlorination of ethylene to EDC
IN Eden, Jamal S., Akron, OH, United States
Cowfer, Joseph A., Medina, OH, United States
PA The BF Goodrich Company, Akron, OH, United States (U.S. corporation)
PI US 4740642 19880426
AI US 1986-898566 19860821 (6)
DT Utility
FS Granted
EXNAM Primary Examiner: Evans, J. E.
LREP Csontos, Alan A.
CLMN Number of Claims: 6
ECL Exemplary Claim: 1
DRWN 1 Drawing Figure(s); 1 Drawing Page(s)
LN.CNT 881
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A fluidizable **catalyst** composition is provided containing about 2% to about 8% by weight of **copper** (about 4% to about 17% by weight of **copper** salt), from about 0.2% to about 10% by weight of a **rare earth** metal salt(s), preferably the chloride salt(s), and from about 0.25% to about 2.3% by weight of an alkali metal salt(s), preferably the chloride salt(s), all weight percents based upon the total weight of the **catalyst** composition. The metals are codeposited on a fluidizable, high surface area alumina support. The weight of the alkali metal employed is not over 2.5% by weight (as the chloride) and the weight ratio of the **rare earth** metal salt(s) to the alkali metal salt(s) must be at least 0.8:1. Such **catalyst** compositions are extremely useful as fluid bed **catalysts** in the vapor phase oxychlorination reaction of ethylene, oxygen and hydrogen chloride to produce 1,2-dichloroethane (EDC). The use of the **catalysts** results in improved, high percent ethylene efficiencies and high percent HCl conversions, and avoids operating problems caused by stickiness of the **catalyst** in the fluid bed. A combination of **copper** chloride, potassium chloride and one or more of the **rare earth** chlorides on a fluidizable gamma alumina support, produces an excellent **catalyst** for a fluid bed ethylene oxychlorination process.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L7 ANSWER 8 OF 10 USPATFULL on STN
AN 78:61386 USPATFULL
TI Pyrogenic silica or titania or alpha-alumina cuprous chloride **catalyst** of hydrogen chloride/oxygen reaction
IN Pieters, Wim J. M., Morristown, NJ, United States
Carlson, Emery J., Chatham, NJ, United States
Gates, William E., Andover, NJ, United States
Conner, Jr., William C., Succasunna, NJ, United States
PA Allied Chemical Corporation, Morristown, NJ, United States (U.S. corporation)
PI US 4123389 19781031
AI US 1977-765161 19770202 (5)
DT Utility
FS Granted
EXNAM Primary Examiner: Gantz, Delbert E.; Assistant Examiner: Wright, William G.
LREP Harman, Robert A.
CLMN Number of Claims: 7
ECL Exemplary Claim: 1
DRWN No Drawings
LN.CNT 656
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB **Catalyst** of cuprous chloride, as a first layer, on a carrier of particles of pyrogenic anhydrous silica or titania, or alpha-alumina produced from pyrogenic gamma-alumina, having as a second layer an alkali metal chloride especially KCl, and preferably also a **rare earth** metal chloride; especially LaCl.sub.3 ; formed by impregnation using non-aqueous solvents, especially CuCl in acetonitrile followed by KCl/LaCl.sub.3 in formic acid. The **catalyst** is effective at desirable reaction rates at temperatures well below 400° C., such as 200°-300° C. and even below 200° C., under certain conditions, for oxyhydrochlorination of organic materials such as methane; and is also effective for production of chlorine by the Deacon process at relatively low temperatures. Problems due to **catalyst** volatility and melting are substantially mitigated.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L7 ANSWER 9 OF 10 USPATFULL on STN
AN 78:3593 USPATFULL
TI Fluidized deoxychlorination **catalyst** composition
IN Blake, Robert J., Oakland, CA, United States
Roy, Guy W., Richmond, CA, United States
PA Stauffer Chemical Company, Westport, CT, United States (U.S. corporation)
PI US 4069170 19780117
AI US 1976-750027 19761213 (5)
RLI Continuation of Ser. No. US 1975-601744, filed on 4 Aug 1975, now abandoned which is a continuation of Ser. No. US 1973-418494, filed on 23 Nov 1973, now abandoned which is a continuation of Ser. No. US 1971-212793, filed on 27 Dec 1971, now abandoned which is a division of Ser. No. US 1968-772395, filed on 31 Oct 1968, now patented, Pat. No. US 3657367
DT Utility
FS Granted
EXNAM Primary Examiner: Garvin, Patrick P.; Assistant Examiner: Wright, William G.
LREP Bradley, Michael J.
CLMN Number of Claims: 4
ECL Exemplary Claim: 1
DRWN No Drawings
LN.CNT 483
AB **Catalyst** compositions comprising mixtures of salts of **copper**, potassium, didymium, lanthanum and magnesium are useful in the fluidized bed oxychlorination of aliphatic hydrocarbons. The **catalyst** composition loading is disposed on a suitable support media, preferably an alumina and does not cake or cause defluidization of the bed under start-up, operating, or shut-down conditions.

L7 ANSWER 10 OF 10 USPATFULL on STN
AN 75:69009 USPATFULL
TI Dehydrohalogenation of halogenated hydrocarbons
IN Ward, Joe Arthur, Lake Jackson, TX, United States
PA The Dow Chemical Company, Midland, MI, United States (U.S. corporation)
PI US 3927131 19751216
AI US 1974-477577 19740610 (5)
DT Utility
FS Granted
EXNAM Primary Examiner: Gantz, Delbert E.; Assistant Examiner: Boska, Joseph A.
LREP Ancona, A. Cooper
CLMN Number of Claims: 9
ECL Exemplary Claim: 1
DRWN No Drawings
LN.CNT 263
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB An improved method of dehydrohalogenating halogenated aliphatic hydrocarbons by employing a **catalyst** which comprises a **rare earth** oxide, e.g. lanthanium oxide, or the **rare earth** oxide together with a platinum group metal, e.g. platinum, on a suitable support. The dehydrochlorination of 1,2,3-trichloropropane to 1,3-dichloropropenes has been accomplished with increased selectivity and less undesirable carbon formation.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L10 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2001:396811 CAPLUS
DN 134:368589
TI Oxyhalogenation process using catalysts having porous rare earth halide support
IN Gulotty, Robert J., Jr.; Jones, Mark E.; Hickman, Daniel A.
PA The Dow Chemical Company, USA
SO PCT Int. Appl., 26 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 6

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001038271	A1	20010531	WO 2000-US31490	20001116
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	BR 2000015922	A	20020806	BR 2000-15922	20001116
	EP 1235769	A1	20020904	EP 2000-978721	20001116
	EP 1235769	B1	20040526		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
	JP 2003514879	T2	20030422	JP 2001-539828	20001116
	TW 524791	B	20030321	TW 2000-89124674	20001121
	US 6680415	B1	20040120	US 2002-130107	20020514
	BG 106724	A	20021229	BG 2002-106724	20020520
	NO 2002002398	A	20020716	NO 2002-2398	20020521
	US 2004097767	A1	20040520	US 2003-706545	20031112
PRAI	US 1999-166897P	P	19991122		
	WO 2000-US31490	W	20001116		
	US 2002-130107	A3	20020514		

AB An oxidative halogenation process involves contacting a hydrocarbon (e.g., ethylene) or a halogenated hydrocarbon with a source of halogen (e.g., hydrogen chloride) and a source of oxygen (e.g., air) in the presence of a catalyst (e.g., Cu on lanthanum chloride) so as to form a halocarbon, preferably a chlorocarbon, having a greater number of halogen substituents than the starting hydrocarbon or halogenated hydrocarbon (e.g., 1,2-dichloroethane). The catalyst is a novel composition comprising copper dispersed on a porous rare earth halide support, preferably, a porous rare earth chloride support. A catalyst precursor composition comprising copper dispersed on a porous rare earth oxyhalide support is disclosed. Use of the porous rare earth halide and oxyhalide as support materials for catalytic components is disclosed.
RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 1 OF 5 USPATFULL on STN
AN 2004:127781 USPATFULL
TI Oxyhalogenation process using catalyst having porous **rare earth** halide support
IN Gulotty, Robert J., JR., Midland, MI, UNITED STATES
Jones, Mark E., Midland, MI, UNITED STATES
Hickman, Daniel A., Midland, MI, UNITED STATES
PI US 2004097767 A1 20040520
AI US 2003-706545 A1 20031112 (10)
RLI Division of Ser. No. US 2002-130107, filed on 14 May 2002, GRANTED, Pat. No. US 6680415 A 371 of International Ser. No. WO 2000-US31490, filed on 16 Nov 2000, PENDING
PRAI US 1999-166897P 19991122 (60)
DT Utility
FS APPLICATION
LREP THE DOW CHEMICAL COMPANY, INTELLECTUAL PROPERTY SECTION, P. O. BOX 1967, MIDLAND, MI, 48641-1967
CLMN Number of Claims: 16
ECL Exemplary Claim: 1
DRWN No Drawings
LN.CNT 751
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB An oxidative halogenation process involving contacting a hydrocarbon, for example, ethylene, or a halogenated hydrocarbon with a source of halogen, such as hydrogen chloride, and a source of oxygen in the presence of a catalyst so as to form a halocarbon, preferably a chlorocarbon, having a greater number of halogen substituents than the starting hydrocarbon or halogenated hydrocarbon, for example, 1,2-dichloroethane. The catalyst is a novel composition comprising copper **dispersed** on a porous **rare earth** halide support, preferably, a porous **rare earth** chloride support. A catalyst precursor composition comprising copper **dispersed** on a porous **rare earth** **oxyhalide** support is disclosed. Use of the porous **rare earth** halide and **oxyhalide** as support materials for catalytic components is disclosed.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L5 ANSWER 2 OF 5 USPATFULL on STN
AN 2004:15070 USPATFULL
TI Oxyhalogenation process using catalyst having porous **rare earth** halide support
IN Gulotty, Jr., Robert J., Midland, MI, United States
Jones, Mark E., Midland, MI, United States
Hickman, Daniel A., Midland, MI, United States
PA Dow Global Technologies Inc., Midland, MI, United States (U.S. corporation)
PI US 6680415 B1 20040120
WO 2001038271 20010531
AI US 2002-130107 20020514 (10)
WO 2000-US31490 20001116
PRAI US 1999-166897P 19991122 (60)
DT Utility
FS GRANTED
EXNAM Primary Examiner: Richter, Johann; Assistant Examiner: Price, Elvis O.
LREP Zuckerman, Marie F.
CLMN Number of Claims: 27
ECL Exemplary Claim: 1
DRWN 0 Drawing Figure(s); 0 Drawing Page(s)
LN.CNT 834
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB An oxidative halogenation process involving contacting a hydrocarbon,

for example, ethylene, or a halogenated hydrocarbon with a source of halogen, such as hydrogen chloride, and a source of oxygen in the presence of a catalyst so as to form a halocarbon, preferably a chlorocarbon, having a greater number of halogen substituents than the starting hydrocarbon or halogenated hydrocarbon, for example, 1,2-dichloroethane. The catalyst is a novel composition comprising copper **dispersed** on a porous **rare earth** halide support, preferably, a porous **rare earth** chloride support. A catalyst precursor composition comprising copper **dispersed** on a porous **rare earth** **oxyhalide** support is disclosed. Use of the porous **rare** **earth** halide and **oxyhalide** as support materials for catalytic components is disclosed.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L5 ANSWER 3 OF 5 USPATFULL on STN
AN 2003:208178 USPATFULL
TI Catalyst compositions for the ammoxidation of alkanes and olefins, methods of making and of using same
IN Mamedov, Edouard A., Houston, TX, UNITED STATES
Bethke, Kathleen A., Sugar Land, TX, UNITED STATES
Shaikh, Shahid N., Houston, TX, UNITED STATES
Araujo, Armando, Houston, TX, UNITED STATES
Kulkarni, Neeta K., Houston, TX, UNITED STATES
Khodakov, Andrei, Ville neuve d'Ascq, FRANCE
PA Saudi Basic Industries Corporation (SABIC) (U.S. corporation)
PI US 2003144539 A1 20030731
US 6710011 B2 20040323
AI US 2001-36866 A1 20011221 (10)
DT Utility
FS APPLICATION
LREP JIM WHEELINGTON, SABIC Americas, Inc., SABIC Technology Center, 1600 Industrial Blvd., Sugar Land, TX, 77478
CLMN Number of Claims: 128
ECL Exemplary Claim: 1
DRWN 1 Drawing Page(s)
LN.CNT 1573
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB A catalyst composition for the vapor phase ammoxidation of alkanes and olefins of the general empirical formulae:

VSb.sub.aM.sub.bO.sub.x

VSb.sub.aM.sub.bM'.sub.b'O.sub.x

VSb.sub.aM.sub.bQ.sub.cO.sub.x

VSb.sub.aM.sub.bQ.sub.cQ'.sub.c'O.sub.x

wherein M and M' are at least one element selected from magnesium, aluminum, zirconium, silicon, hafnium, titanium and niobium, M and M' being different, Q and Q' are at least one element selected from rhenium, tungsten, molybdenum, tantalum, manganese, phosphorus, cerium, tin, boron, scandium, bismuth, gallium, indium, iron, chromium, **lanthanum**, yttrium, zinc, cobalt, nickel, cadmium, **copper**, strontium, barium, calcium, silver, potassium, sodium and cesium, Q and Q' being different, a is 0.5 to 20, b is 2 to 50, b' is 0 to 50, c is 0 to 10, c' is 0 to 10 and x is determined by the valence requirements of the elements present. The **catalyst** composition containing isolated vanadium and antimony species in an inert matrix is prepared by incorporating respective compounds of vanadium and antimony into the oxide of at least one or more M and adding by co-precipitation or impregnation one or more optional Q in the

relative atomic proportions indicated by the subscripts.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L5 ANSWER 4 OF 5 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 1
AN 2001:396811 CAPLUS
DN 134:368589
TI Oxyhalogenation process using catalysts having porous **rare earth** halide support
IN Gulotty, Robert J., Jr.; Jones, Mark E.; Hickman, Daniel A.
PA The Dow Chemical Company, USA
SO PCT Int. Appl., 26 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 6

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001038271	A1	20010531	WO 2000-US31490	20001116
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	BR 2000015922	A	20020806	BR 2000-15922	20001116
	EP 1235769	A1	20020904	EP 2000-978721	20001116
	EP 1235769	B1	20040526		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
	JP 2003514879	T2	20030422	JP 2001-539828	20001116
	TW 524791	B	20030321	TW 2000-89124674	20001121
	US 6680415	B1	20040120	US 2002-130107	20020514
	BG 106724	A	20021229	BG 2002-106724	20020520
	NO 2002002398	A	20020716	NO 2002-2398	20020521
	US 2004097767	A1	20040520	US 2003-706545	20031112
PRAI	US 1999-166897P	P	19991122		
	WO 2000-US31490	W	20001116		
	US 2002-130107	A3	20020514		

AB An oxidative halogenation process involves contacting a hydrocarbon (e.g., ethylene) or a halogenated hydrocarbon with a source of halogen (e.g., hydrogen chloride) and a source of oxygen (e.g., air) in the presence of a **catalyst** (e.g., Cu on **lanthanum** chloride) so as to form a halocarbon, preferably a chlorocarbon, having a greater number of halogen substituents than the starting hydrocarbon or halogenated hydrocarbon (e.g., 1,2-dichloroethane). The **catalyst** is a novel composition comprising **copper dispersed** on a porous **rare earth** halide support, preferably, a porous **rare earth** chloride support. A **catalyst** precursor composition comprising **copper dispersed** on a porous **rare earth oxyhalide** support is disclosed. Use of the porous **rare earth** halide and **oxyhalide** as support materials for catalytic components is disclosed.

RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 5 OF 5 USPATFULL on STN
AN 2000:156857 USPATFULL
TI Catalyst compromising a mixed sulphide and its use for hydrorefining and hydroconverting hydrocarbons
IN Raybaud, Pascal, Nice, France

Toulhoat, Herve, Houilles, France
Kasztelan, Slavik, Rueil-Malmaison, France
PA Institut Francais du Petrole, Rueil Malmaison Cedex, France (non-U.S. corporation)
PI US 6149799 20001121
AI US 1998-7049 19980114 (9)
PRAI FR 1997-443 19970115
DT Utility
FS Granted
EXNAM Primary Examiner: Bell, Mark L.; Assistant Examiner: Hailey, Patricia L.
LREP Millen, White, Zelano & Branigan, P.C.
CLMN Number of Claims: 24
ECL Exemplary Claim: 1
DRWN 2 Drawing Figure(s); 2 Drawing Page(s)
LN.CNT 1236
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The invention concerns a catalyst for hydrorefining and hydroconverting hydrocarbon feeds, comprising a mixed sulphide comprising at least two elements selected from elements with an atomic number selected from the group formed by the following numbers: 3, 11, 12, 19 to 33, 37, to 51, 55 to 83, 87 to 103, characterized in that the mixed sulphide results from a combination of at least one element the sulphide of which has a bond energy between the metal and sulphur of less than 50±3 kcal/mol (209±12 kJ/mol) and at least one element the sulphide of which has a bond energy between the metal and sulphur of more than 50±3 kcal/mol (209±12 kJ/mol), the mixed sulphide thus having a mean bond energy between the metal and sulphur which is in the range 30 to 70 kcal/mol (125 to 293 kJ/mol).

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

=>